Title: Performance Evaluation of Draft Gear and Automatic Coupler with Coupler Head and Draft Gear [SSP 40941]

Duration: February 2025 to July 2025

Deliverables: (a) Endurance test on draft gear up to 10000 cycles each under buff and draw modes and (b) Vertical shear strength test on automatic coupler with coupler head and draft gear up to a maximum load of 445 kN.

Significant Achievements:

Static vertical shear strength test on Type 10 coupler head with draft gear (with deformation tube) assembly was carried out. The test was carried out in load steps from 0 kN to 445 kN and then unloaded to zero. During the vertical shear strength test, load, load-line displacement, strains at different locations were monitored. Endurance test on draft gear (with deformation tube) under buff and draw modes was carried out as per EN 15551 : 2016 standard. Static tests were carried out before and after the endurance tests under buff and draw modes. The draft gear was subjected to 10000 cycles of loading under buff and draw modes. During the endurance tests, load, load-line displacement and strains at critical locations were monitored. No slippage of nuts and no failure of bolts was observed during the static and endurance tests. The draft gear (with deformation tube) assembly tested fulfilled the test requirements specified by the client/RDSO specifications and successfully passed the prescribed tests. There is no damage / fracture of parts observed in the draft gear assembly, after the completion of the test.

Set-up for vertical shear strength test on coupler head with draft gear

Set-up for endurance test on draft gear

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